

RANA SALEM

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Experience

Software Developer Jan 2024-present

DEFRA (Department for Environment, Food and Rural Affairs)

- Contracted through FDM Group to join the Farming Front Door (FFD) team as a software developer (specialising in Node.js) under the Farming and Countryside Programme (FCP).

IT Consultant (Software Developer) Apr 2023-present

FDM Group

- Working with one of FDM's public sector clients (Department for Environment, Food and Rural Affairs) as a Node.js software developer.
- Awarded the Tech Industry Gold Foundation Credential in Software Development for showcasing proficiency in Java, SQL, Unix, HTML, CSS, Spring Boot, Microservices, REST APIs, React, JavaScript, Git.

Laboratory Demonstrator 2022-2023

Glasgow Caledonian University

- Excelled as a teaching assistant, mentoring final year undergraduates and a PhD candidate, while demonstrating the use of laboratory equipment for independent research.
- Prioritised safety by enforcing health and safety measures during student's time in the laboratory, fostering a secure and safe learning environment.

Royal Society of Chemistry (RSC) Research Enablement Scholarship May-Aug 2022

Glasgow Caledonian University & University of Glasgow

- Explored the effects of established textile conservation protocols on historic textile artefacts, with results presented as a poster and flash talk at the Microscience Microscopy Congress (MMC2023) in Manchester, England.
- Utilised advanced tools including AFM, SEM, and fluorescence spectroscopy to generate project data.

Postgraduate Research Intern (PUBLISHED) Jul-Sep 2021

Glasgow Caledonian University & University of Glasgow

- Examined the effects of textile cleaning on historic cotton textiles using advanced instrumentation: AFM and UV/Vis (Ultraviolet/Visible) spectroscopy.
- The research was published in the peer-reviewed Heritage Science journal.

Royal Microscopical Society (RMS) Summer Studentship (PUBLISHED) Jun-Aug 2020

Glasgow Caledonian University & University of Glasgow

- Analysed textile fibres pre- and post-cleaning with established conservation protocols, with findings published in Infocus Magazine (an RMS publication).
- Featured a poster at the Microscience Microscopy Congress (MM2021) and delivered a local presentation to staff and students from the RMS and partner universities.

Projects

Busgres NPM Package (github.com/rtsalem/busgres)

- Summary: Busgres is a Node.js package that will receive a message from an Azure Service Bus queue and save it into a PostgreSQL database.
- Role: Sole developer.
- Technologies: Node.js, Azure Service Bus, PostgreSQL.

Barbie E-commerce Website (github.com/rtsalem/barbie-ecommerce-website)

- Summary: E-commerce website selling Barbie-themed outfits. Capabilities of the website include being able to add items to a shopping basket or wish list and searching for items either by name, description, or category.
- Role: Back-end Developer (in a team of 7).
- Technologies: Java, Spring Boot, REST API, JUnit, Mockito, JavaScript, React, HTML, CSS.

Take A Bao Shop Menu (github.com/rtsalem/take-a-bao-shop-menu)

- Summary: Read-only online menu for a pop-up bao bar that also acts as a fundraising platform.
- Role: Full Stack Developer.
- Technologies: Java, Spring Boot, REST API, Postman, JavaScript, React, HTML, CSS.

Education

Master of Science w/ Merit, Forensic Science 2021-2022
University of Strathclyde, MSc (Glasgow, Scotland)

- Dissertation: *Are Established Bleaching Practices in Textile Conservation Damaging Historic Treasures? A Microscopic and Spectroscopic Investigation.*

Bachelor of Science w/ 1st Class Honours, Forensic Investigation 2017-2021
Glasgow Caledonian University, BSc (Hons) (Glasgow, Scotland)

- Dissertation: *Analysis of the Effect of Conservation Bleaching Methods on Historic Textiles.*

Erasmus+, Degree Programme in Laboratory Sciences Aug-Dec 2019
Metropolia University of Applied Science (Helsinki, Finland)

- A semester spent as an exchange student in Helsinki, Finland.

Publications & Presentations

PUBLICATIONS

Salem, R.T.A., Thompson, K., Uttamlal, M. *Bleaching cotton in textile conservation: a closer look using atomic force microscopy.* Heritage Science. 2022;10:195.
<https://doi.org/10.1186/s40494-022-00830-2>.

Salem, R. *RMS Summer Studentship Report: Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning*. Infocus Magazine: Proceedings of the Royal Microscopical Society. 2020;60:32-35. <https://doi.org/10.22443/rms.inf.1.194>.

PRESENTATIONS

Microscience Microscopy Congress (MMC2023) Jul 2023
Salem, R.T.A., Thompson, K., Uttamlal, M. *Microscopic Analysis of New and Historic Cotton Fibre Cross-Sections*. Microscience Microscopy Congress 2023. Manchester Central Convention Complex (Manchester, England).

Microscience Microscopy Congress (MMC2021) Jul 2021
Salem, R., Uttamlal, M., and Thompson, K. *Microscopic analysis of new and historic cotton textiles pre- and post-bleaching*. Microscience Microscopy Congress 2021. Poster abstract: <https://www.mmc-series.org.uk/mmc2021/abstract/microscopic-analysis-of-new-and-historic-cotton-textiles-pre-and-post-bleaching.html>.

Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning Oct 2020
Royal Microscopical Society Summer Studentship 2020. Glasgow, Scotland.

Professional Development

- Microsoft Azure Fundamentals (AZ-900) Certification (Microsoft) Oct 2023
- Tech Industry Gold Credential: Software Development (TechSkills) Jul 2023
- Introducing British Sign Language (BSL) (CPD) Dec 2021

Awards & Achievements

- Royal Society of Chemistry Research Enablement Grant (£10,000) May-Aug 2022
- GCU Mitigation Reboot Fund (£5000) Jul-Sep 2021
- University of Strathclyde Faculty of Science Masters Scholarship (£1000) Mar 2021
- Royal Microscopical Society Summer Studentship (£2000) Jun-Aug 2020
- Nancy Smilie Award 2016-2017 for Photography (Hillhead High School) Jan 2017
- Bronze Duke of Edinburgh's Award Nov 2016
- Charles Hepburn Scholarship Trust (Hillhead High School) Sep 2016
- Netball Leaders Award (Hillhead High School) Jan 2014

Interests: Long-distance running, swimming, reading, networking, web development, server-side development, cloud.